A comparison of OPACs
LIS 415 Assignment 1

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Introduction

For this paper, I examined the online public access catalogs (OPACs) of the libraries of Simmons College and three large universities. These OPACs, which run on software from four different vendors, show a great many similarities and several notable differences.

The catalogs studied may be found at the following URLs:

Simmons College (Innovate Interfaces): `http://library.simmons.edu/`

University of Calgary (SIRSI): `http://seter.lib.ucalgary.ca/uhtbin/cgisirsi/ 0/0/0/38/2/X/BLASTOFF`

University of Michigan (Ex Libris): `http://mirlyn.lib.umich.edu/`

Auburn University (Endeavor): `http://aubiecat.auburn.edu/`

In the remainder of this paper, I'll refer to these catalogs more concisely as Simmons, UCalgary, UMich, and Auburn, respectively.[1]

Comparison of features

In this paper, I start with the catalogs' home pages and move on to their search interfaces, their presentation of search results, and the display of individual records. Along the way, I'll run through some sample searches and introduce a taxonomy of search types that may help to delineate the various search capabilities provided by these OPACS and, perhaps, others.

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[1] Two of the catalogs have rather whimsical names: UMich's is called *Mirlyn*—this originally stood for MIchigan Research LibrarY Network—while the home page for Auburn's *AubieCat* features a large picture of a not entirely friendly-looking tiger, the school's mascot.

Figure 1: UCalgary start page.

Start pages

An OPAC's home (or 'start') page is, in some respects, the most important part of the catalog. A good start page gives the user an indication of the catalog's coverage and capabilities and includes links to other resources—such as searchable databases and forms to request items through ILL or to renew books—that the user may find helpful. It also provides a simple interface to the most commonly used types of searches (author, title, and subject) so that the user can get right to the task of searching.

The start page takes on added significance in OPACs in which the user is led (or required) to return to it to start a new search or to perform a particular type of search. As we'll see below, this can either improve the user's experience of the catalog or detract from it.

UCalgary's start page, shown in figure 1, is a good example of a useful starting point: it presents the user with a simple but powerful search interface, search limits that allow for the selection of materials available online or at a particular branch, and links to three special searches. After I performed a search from this page, I was able to return to it by clicking on the 'New catalogue search' link available on any other page. However, this link was no longer available once I chose another search interface (basic or advanced); instead, I had to resort to my browser's back button.

The start page for the UMich catalog is similar in content but takes up an astounding 800 pixels of width. As figure 2 shows, the oversize header area could easily have been arranged differently to save the user some treasured screen space.

The start page for Simmons is markedly different from the other three. Whereas the other catalogs' start pages include a search form allowing for immediate searching by common fields (author, subject, title, journal title, and sometimes more), Simmons—as shown in figure 3—requires the user to begin by choosing a field to search before actually entering the desired search term(s).

As I'll describe later, in order to perform an advanced search I had to return to this start page; this extra step may discourage users from taking advantage of the additional power and concise-

Figure 2: UMich start page.

Figure 3: Simmons start page.

ness of advanced searching in Simmons. Other OPACs that I examined didn't have this annoying feature.

Searching

Although the kinds of searches available in the four catalogs varied quite a bit, much of the variation was in terminology and interface. In trying to make a comparison of the OPACs more straightforward, especially given their varying uses of the term *keyword search*, I devised a small taxonomy of search types such that a search in any of the catalogs can be broadly categorized according to the following three parameters:

Field. How many fields are covered by the search? (What the user thinks of as a single-field search actually entails searching several fields at once, at least in most cases–for example, a title search might search MARC fields 245, 246, 222, 490, 830, and others. However, conceptually these constitute a single *class* of field, and since my focus in this paper is on the *user's* view of OPACs, I'll regard these as single-field searches.)

- One field only.

- A user-specified set of fields.

- All searchable fields at once. (Typically, the user has no easy way of determining exactly which fields are searchable.)

Sequence. Must the individual words in the search term occur in any particular order within the field for a record to be considered a match?

- Words must be adjacent (a phrase search).

- Words may occur in any sequence (a keyword search).[2]

Anchoring. Are matching occurrences of the search term constrained to any particular location(s) in the field?

- Terms must occur at the beginning of the field (sometimes called a 'browse' search).

- None—terms may occur anywhere in the field.

- Terms are anchored at the beginning and end of a field (a 'whole' field search).

For example, each catalog provides a way to search by classification number; in each case, such a search requires individual words to be *adjacent* and *anchored* to the beginning of the field, but the field being searched varies: Simmons and UCalgary require the user to choose between Library of Congress and Dewey Decimal classification numbers, while the other catalogs search both at once. (UCalgary also provides searches by ASIS, NLM, and a few other call number schemes.)

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[2]A third option, in which words must occur in order but not necessarily adjacent, is available in some OPACs but not any of the three compared in this paper.

Of the four OPACs, only UMich and UCalgary offered fully anchored ('whole' or 'exact') searching; this was available for all fields, including author, title, and subject headings. (In UMich, however, these whole-field searches were cryptically labeled 'W-Title,' 'W-Author,' and so on; if I hadn't worked there, I wouldn't have guessed what these searches were.)

Except in searches specifically referred to as keyword searches, all search terms in Simmons and Auburn were implicitly anchored at the beginnings of fields. The other two provided both this type of search (called 'browse' at UCalgary and more explicitly referred as 'Title begins with...' and so on at UMich).

Advanced searching

Each of the OPACs I studied provides most of the common functions of an advanced search interface. (This can also be thought of as a taxonomy, albeit overlapping the one sketched out above.)

Multiple fields. All four catalogs allow the user to search more than one field at a time. The OPACs differ greatly, however, in the ease with which such a search may be constructed.

Keywords. A keyword search may target a particular field, a set of two or more fields, or all searchable fields at once.Each of the four catalogs examined in this paper has provisions for at least the first and last of these. (According to the taxonomy presented above, a keyword search in each of the OPACs may be categorized as ⟨Sequence: *any*, Anchoring: *none*⟩).

Boolean operators. All four OPACs provide the familiar set of Boolean logical operators when conducting an advanced search: AND, OR, and NOT. Each of them uses NOT as a binary operator, not a true unary operator—for example, y NOT x rather than x AND NOT(x)—which may be confusing to users with a math or computer science background. The alternative, however, would likely be just as confusing to a different set of users.

Command language. In some OPACs, a user may enter a search more concisely and more quickly into a single field using a special syntax rather than having to enter the search piecemeal by filling in text entry fields, selecting from pull-down menus, checking boxes, and so on. The capabilities and syntax of search command languages vary from library to library, but their common aim is to provide users with an alternate interface to complex searches that, while possible, would otherwise be much more time-consuming to construct. Of the four OPACs studied here, only Simmons and UMich offer this type of search. UCalgary appears to have a command language function, which the user apparently specifies by selecting 'Command Keyword' from a menu of searchable fields provided on the start page and in the basic search interface (but not, strangely, in the keyword search page). The command language doesn't appear to be documented, however.

While the four OPACs are alike in providing advanced search capabilities, the interface presented to the user varies considerably among them.

Figure 4 shows the advanced search from UCalgary; UMich's interface is very similar.

Figure 4: UCalgary advanced search.

The advanced search form in Simmons is well hidden and difficult to use: the user must choose to search by keyword, then use an unwieldy syntax to specify the fields to search. What's worse, the examples given don't adequately illustrate the syntax and don't give the user any tips on *when* to use an advanced search. In other words, the advanced search is merely a command language search in disguise.

Advanced searching in Auburn is also referred to as a keyword search, but rather than requiring the use of a command language, it provides Boolean operators via pull-down menus much as the UMich and UCalgary catalogs do.

Other types of searches

All four OPACs provide a search for course reserves materials. UCalgary limits this to course department–plus–course number searching only, while the others allow searching by at least one other field; instructor and department are the most common alternatives. UMich provides reserves searching by title, author, and subject; this interface so closely resembles the main search interface that it took me some time to realize that I had to click on a small 'Exit Reserves' button to get back to searching for other materials. (Even then, I had to go through an intermediate page offering a list of catalogs of on- and off-campus libraries searchable through the UMich OPAC; this was typical of the sloppy linking I found in all four catalogs.)

Search limits

The sets of search limits available in the OPACs are all similar; I was able to limit my searches in each by language, material type, year(s), and location. Unlike the others, however, Auburn's

search limits apply not just to a single search but to every subsequent search in the current session (until the limits are changed, that is). Unfortunately, my sessions kept timing out after just a few minutes of inactivity, which meant that my search limits (and search results) were repeatedly lost. (Simmons and UCalgary had the same problem, but took much longer to time out.)

Search results

I began my comparison of the OPACs' search results displays by performing an author search for 'Shakespeare, William.'

The results reflected the varying sizes of the four institutions' library collections. For example, Simmons yielded a list of 240 matching records, while the search in UCalgary ultimately led to 1172 matches, in Auburn to 1231, and in UMich to an indeterminate number greater than 2000 (the maximum number of records their OPAC is capable of displaying).

The initial search results pages in UMich UCalgary and Auburn were very different from that in Simmons; instead of a long list of matching records spanning many pages of 20 records each, they presented a concise list of matching *headings*. Unfortunately, and not surprisingly, this clustering approach ended there; clicking on the desired heading ('Shakespeare, William, 1564-1616') still yielded a very long list of matching records and, again, these were presented 20 at a time. This limitation was somewhat mitigated in Auburn, where I was able to specify the number of matching records per page, but the result for the user is still a daunting list of records. If only modern library systems and practices had taken Lubetzky's conception of the work to its logical conclusion!

In three of the four OPACs, this search appeared to yield only those records in which the search term occurred in an author field rather than a subject field (though I didn't have time to closely examine each match in order to be entirely certain). The exception was UMich, in which records containing a matching personal name subject heading were also included in the search results; so, at least, it seemed: the headings displayed in the initial, 'overview' results page included some subject headings, and the number of matching records was so much greater than that for any other library that it was hard to come to any other conclusion.

Three of the OPACs listed matching records in alphabetical order by title, with the title (or, sometimes, another search term) taking the form of a link to the individual record. The notable exception was UCalgary, in which records didn't appear to be in any particular order and buttons were used to link to individual records. Auburn and UMich offer the option to re-sort the records by author, publication date (ascending), or publication date (descending); UMich also provide an option to sort by format (monograph, serial, and so on), which would come in very handy for some applications.

The information presented in the list of matching records varied somewhat from library to library. UCalgary, despite its bizarre sorting of results, included some pictures of book covers, links to continue the search in Amazon.com, Google, and elsewhere, and (most impressive of all) a list of all the subject headings found in the matching records. Unfortunately, the presence of all this information called for a lot of scrolling and there didn't seem to be any way to reduce the information presented.
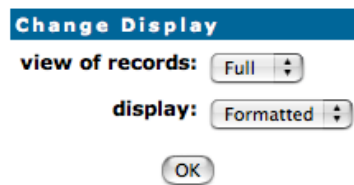
Figure 5: UCalgary record display type setting

Each catalog provided a way to mark records in the search results pages for later viewing, generally by means of a checkbox next to each title. Marking a record in UCalgary required clicking on a regular button, whose label then changed from 'Mark' to 'Remove', making it much more difficult to quickly discern which records were marked.

Record display

To get a feel for the various record display types, I performed a search for *Future shock* by Alvin Toffler, then followed the appropriate link from the list of matches to the record for the 1970 Random House edition. (Auburn didn't show this edition, so I examined the record for a reprint instead.) Each OPAC's default record display included the book's author, title, imprint, date, physical description, and local holdings information (location, call number, and item status). All the OPACS except UCalgary listed the record's subject headings—but recall that UCalgary lists the aggregate subject headings in the results pages.

Each of the four OPACs provides at least one other view containing additional information, including a MARC record view. The terms used to denote these different views vary widely; for example, the default view in UMich is called 'Full record' with the alternatives labeled 'Printer friendly' (a card catalog–type view), 'MARC tags,' and 'Named tags' (apparently including every field displayed in the MARC view, but with textual labels in place of the numeric tags).

UCalgary is unique in that the record display type, like search limits, is implemented as a session-wide setting: changing from a brief to a long view requires clicking on a link to change the display type, then returning to the record. The choice here, however, is two-fold: the user specifies, independently of each other, both the amount of information presented (brief, full or all) and the type of presentation used (formatted or MARC). While I admire the conceptual crispness of this approach, I have to wonder how many of the OPAC's users actually take advantage of it. Figure 5 shows the interface for changing this setting in UCalgary.

The fullest information in each OPAC was found in the MARC record display, whose exact contents varied from catalog to catalog even though all displayed the same record (except Auburn, as noted above). The MARC view in UMich displayed 29 fields, not counting local holdings information, which I presume to include every field in the record (even the leader and a slew of 035 fields); Simmons and UCalgary lagged far behind, with 16 and 17 fields each. Auburn's MARC view also appeared to be exhaustive, but I couldn't be certain since it represented a different edition.

Conclusions

The four OPACs studied for this paper exhibited a variety of quirks and shortcomings, with an occasional flash of brilliance.

Overall, I was most impressed by Auburn University's online catalog. The University of Michigan's OPAC—a recent upgrade from an earlier, heavily customized NOTIS ILS—was a strong contender but showed some of the pains of a new implementation. (Then again, I may be biased, having experienced some of those pains firsthand while working with the new system during the first few months of its existence.)

I was least impressed by the Simmons College OPAC, and frankly surprised that a school with such a highly regarded graduate program in library and information science should have such a mediocre online catalog.

The University of Calgary OPAC was a mixed bag of useful and even innovative features (the concise all-in-one search page, session-wide search limits and record display settings, and the list of aggregate subject headings provided on the search results pages) and dismal failures (the random order in which search results appeared and the rapidity with which sessions timed out).

The ideal online catalog would present a concise, clear, and consistent interface to powerful, user-customizable search and display functions, and would show signs that its designers were willing to pursue creative approaches to the OPAC without sacrificing stability or confusing users with a radically different interface. I'm afraid that it may be a long time before we see that, however.